

SPIDERS FROM NEPAL. I. TWO NEW SPECIES OF THE GENUS *AGELENA* (ARANEAE: AGELENIDAE) FROM THE KHUMBU AREA¹⁾

By

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Synopsis

NISHIKAWA, Yoshiaki (Biological Laboratory, Ohtemon-Gakuin University, Ibaraki, Osaka 567, Japan): Spiders from Nepal. I. Two new species of the genus *Agelena* (Araneae: Agelenidae) from the Khumbu Area. *Acta arachnol.*, 29: 73-81 (1980).

Two new agelenid spiders from the area south of Namche Bazar in the Solukhumbu District, East Nepal, are described under the names *Agelena lukla* and *A. sherpa*.

In the autumn of 1979, just after the rainy season, a zoological expedition was made by the National Science Museum, Tokyo, to the eastern part of the Nepal Himalaya. The main purpose of this expedition is to collect small animals living at high altitude, in view of the importance of investigating the temperate fauna of the Himalayas which bears a close relationship with that of the Japanese Islands. Fortunately, I was given an opportunity to participate in the expedition and endeavoured to collect spiders at various parts of East Nepal.

A rich collection of spiders thus obtained is now under the course of examination, and the results of my studies will be published group by group when identification of the species involved is satisfactorily made. In the first place, I am going to take up the agelenid spiders, in particular the genus *Agelena*.

A little more than a dozen species of agelenid spiders have hitherto been described from the Himalayan region; two *Coelotes* from Karakorum (CAPO-

1) This study is supported by the Grants-in-aid for Scientific Research Nos. 404101 and 504301 from the Ministry of Education, Japan.

RIACCO, 1935), one *Tegenaria* from the southern foot of Mt. Cho-Oyu, East Nepal (TIKADER, 1958), two *Agelena* and one *Tegenaria* from Sikkim (TIKADER, 1970), three *Coelotes* from the Nepal Himalaya (BRIGNOLI, 1976), and four *Coelotes* and two *Tegenaria* from Bhutan (BRIGNOLI, 1978). Though all these species belong to the genera widely distributed in the Palearctic Region, all but one (*Tegenaria domestica*) are, so far as known, endemic to the Himalayas. As regards *Agelena*, two TIKADER's species described from Sikkim are the only record hitherto made in the area concerned.

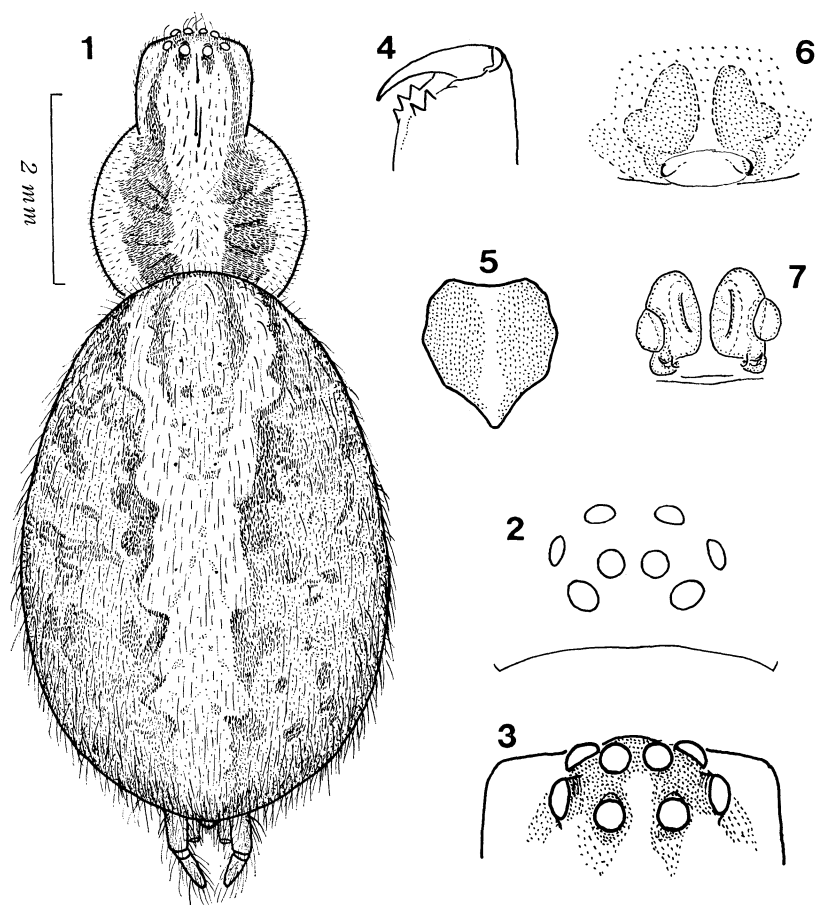
In the present paper, two new species of *Agelena* will be described from the area south of Namche Bazar (=Nauche) in the Solukhumbu District of the Sagarmatha Zone. They were found sitting in funnel webs made in crevices of soil at the side of the trail leading from Lukla (=Luglha) to Namche Bazar at the elevation between 2,590 m and 2,740 m. All the type-specimens to be designated will be deposited in the collection of the National Science Museum (Nat. Hist.), Tokyo.

Before going further, I wish to express my hearty thanks to Dr. Shun-Ichi UÉNO of the National Science Museum (Nat. Hist.), Tokyo, the leader of the expedition, for his constant guidance and encouragement in the course of this study, and for kindly reading the original manuscript. Sincere thanks should go to the members of the expedition: Messrs. Shigeru AE, Masataka SATÔ, Masaaki TOMOKUNI and Mamoru OWADA for their kind aid in this trip. Many thanks are also due to Professor Takeo YAGINUMA of Ohtemon-Gakuin University, who gave valuable advice and provided me with important literature.

Agelena lukla sp. nov.

(Figs. 1-9)

Female (Holotype). Body length 8.2 mm; cephalothorax 3.1 mm long, 2.19 mm wide; abdomen 5.8 mm long, 3.7 mm wide (Fig. 1). The ratio of the width of head to that of thorax 5:9; the ratio of the width of eye area to that of head 4:7. Anterior and posterior eye rows strongly procurved seen from front (Fig. 2). Anterior median eyes (AME) about 0.4 times their diameter apart, 0.3 times the diameter apart from anterior lateral eyes (ALE). ALE the largest. Posterior median eyes (PME) apart from each other by the diameter, about 0.9 times the diameter apart from posterior lateral eyes (PLE). PME the smallest. Order of eyes in diameter, $PME < AME < PLE < ALE$ (21 : 22 : 25 : 27). Median



Figs. 1-7. *Agelena lukla* sp. nov., ♀, from the north of Lukla, East Nepal.
 1. Dorsal aspect. 2. Eye area from front. 3. Eye area from dorsum. 4. Left chelicera. 5. Sternum. 6. Epigynum. 7. Genitalia.

ocular area (MOA) almost as long as wide, narrower in front than behind. Clypeus 2.3 times the diameter of AME. Cephalothorax covered with fine short hairs, which are black in a pair of stripes and white in the remaining part (Fig. 1). Chelicera geniculate, with stout lateral condyle. Promargin of fang furrow with three teeth, retromargin with two teeth (Fig. 4). Labium wider than long (9:7). Sternum longer than wide (7:6), 1.60 mm long, 1.37 mm wide. Leg formula 4, 1, 2, 3. Measurements (in mm) are as follows:

Leg	Fem.	Pat. & Tib.	Met.	Tar.	Total
I	2.24	2.91	2.05	1.30	8.68
II	2.23	2.48	1.80	1.11	7.62
III	2.16	2.30	1.92	0.98	7.36
IV	2.74	3.03	2.70	1.30	9.77

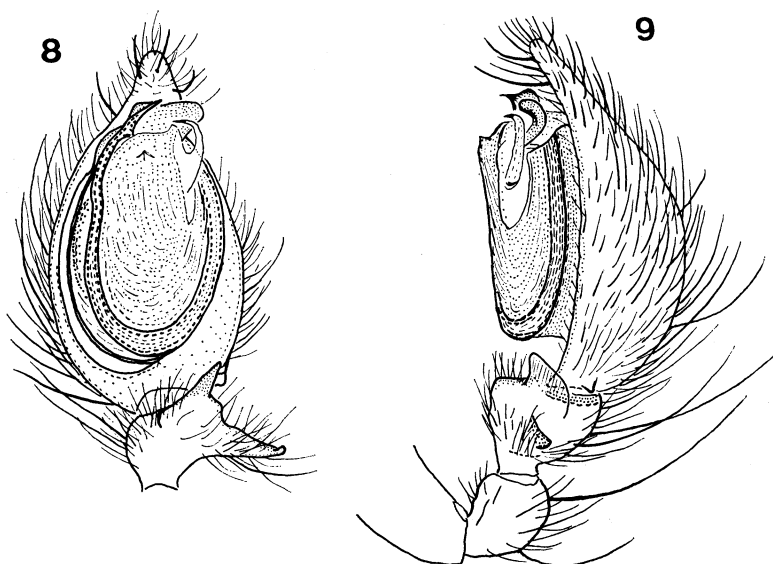
Ventral spines on legs: tibia I, 2-2-0; tibia II, 1-1-0; tibia III, 1-1-1; tibia IV, 1-1-2; metatarsi I, II and III, 2-2-2. Abdomen oval in shape. Posterior spinnerets long, with the apical segment slightly shorter than the basal and tapering. Epigynum small and wider than long (Fig. 6). Openings of spermatheca at both sides of the posterior part. Genitalia as shown in Fig. 7.

Colour. Cephalothorax yellowish brown, a pair of stripes formed by short black hairs, median and lateral parts covered with short white hairs, the margins of thorax black. Chelicerae dark brown; maxillae and labium brown. Sternum grayish brown. Mid-line of sternum light yellowish brown (Fig. 5). Legs grayish brown, with three black ring flecks on each femur, and two black ring flecks on each tibia. Venter of each coxa yellowish brown with a gray spot, distal part gray. Abdomen grayish brown, covered with two kinds of black hairs, short and long, intermingled with white ones; median stripe indented on each side and edged with light yellowish brown at the anterior part; anterior half of the median stripe light reddish brown (Fig. 1).

Male (Allotype). Similar to female in the structure and coloration, but the colour of abdomen is darker than in female and the median stripe is wholly deep reddish brown. Body length 6.8 mm; cephalothorax 3.3 mm long, 2.05 mm wide; abdomen 3.5 mm long. The ratio of the width of head to that of thorax 3:7, that of the width of eye area to that of head 13:19. Leg I 10.7 mm, II 8.85 mm, III 8.44 mm, IV 10.9 mm long. Palp with a short embolic conductor and a large oval radix; palpal tibia with tibial apophysis and a strong prominence on the outer lateral side (Figs. 8-9).

Type-series. Holotype: ♀, allotype: ♂, paratypes: 5♀, 1♂ (en route from Lukla (=Lughla) to Chaunrikharka, 2,740-2,700 m alt., Solukhumbu District, Sagarmatha Zone, East Nepal, L.C. [D8643-2741]²⁾, 29-IX-1979, Y. NISHIKAWA leg.). Paratypes: 1♀, 1♂ (Lomdza, 2,670-2,720 m alt., Solukhumbu District, Sagarmatha Zone, East Nepal, L.C. [D8643-2742], 5-X-1979, Y. NISHIKAWA leg.).

2) MATSUMOTO's Locality Code (MATSUMOTO, 1979).



Figs. 8-9. *Agelena lukla* sp. nov., ♂, from the north of Lukla, East Nepal.
8. Male palp, ventral view. 9. Male palp, ectal view.

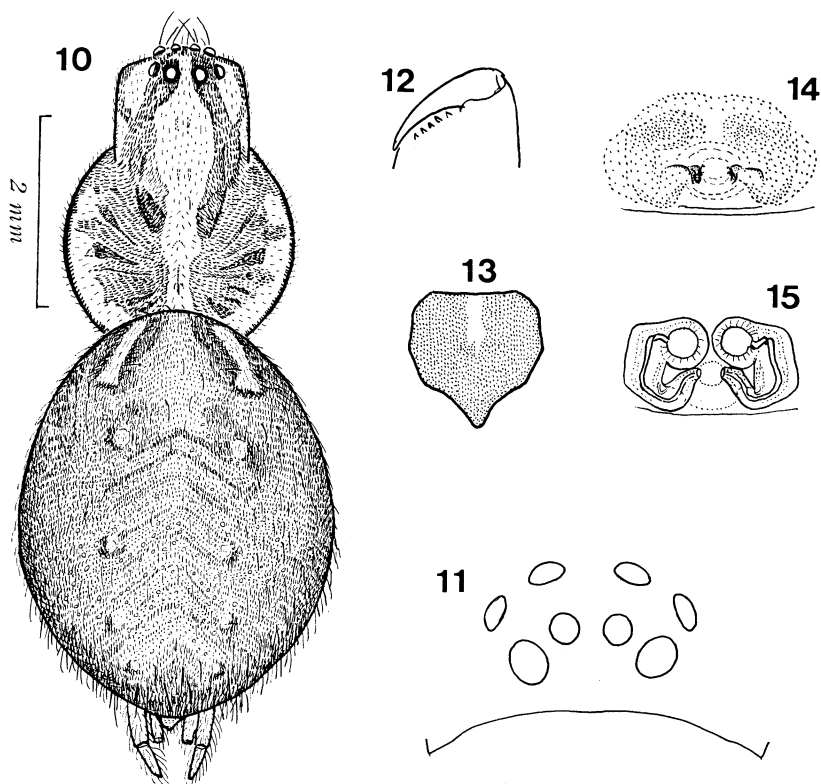
Variation of paratypes. Body length 5.5-6.9 mm (♀), 7.25 mm (♂). Cephalothorax length 2.5-3.0 mm (♀), 3.35 mm (♂); width 1.75 mm (♀), 2.65 mm (♂).

Notes. This new species resembles *Agelena satmila* TIKADER, 1970 from eastern Sikkim, but is distinguished from the latter by the following characteristics: PME smaller than PLE, while in *A. satmila* the former are larger than the latter; dorsum of abdomen with an indented stripe on each side of the mid-line, instead of the chevron pattern as seen in *A. satmila*; epigynum is of different shape.

***Agelena sherpa* sp. nov.**

(Figs. 10-15)

Female (Holotype). Body length 6.9 mm; cephalothorax 3.15 mm long, 2.28 mm wide; abdomen 4.2 mm long, 3.3 mm wide (Fig. 10). The ratio of the width of head to that of thorax 13 : 22; the ratio of the width of eye area to that of head 5 : 8. Anterior and posterior eye rows strongly procurved seen from front (Fig. 11). AME about 0.7 times their diameter apart, 0.4 times the diameter



Figs. 10-15. *Agelena sherpa* sp. nov., ♀, from the north of Phakding, East Nepal. 10. Dorsal aspect. 11. Eye area from front. 12. Left chelicera. 13. Sternum. 14. Epigynum. 15. Genitalia.

apart from ALE. AME the smallest, ALE the largest. PME the diameter apart, two-thirds the diameter apart from PLE. Order of eyes in diameter, $AME < PME = PLE < ALE$ (8 : 10 : 10 : 11). MOA slightly wider than long, narrower in front than behind. Clypeus 2.1 times the diameter of AME. Cephalothorax covered with fine short hairs, and with a pair of wide stripes formed by black hairs (Fig. 10). Chelicera geniculate, with stout lateral condyle. Promargin of fang furrow with three teeth, retromargin with five teeth (Fig. 12). Labium very slightly wider than long (21 : 20). Sternum slightly longer than wide (29 : 28), 1.45 mm long, 1.40 mm wide. Leg formula 1, 4, 2, 3. Measurements (in mm) are as follows :

Leg	Fem.	Pat. & Tib.	Met.	Tar.	Total
I	3.75	4.38	3.65	2.12	13.9
II	3.05	3.36	2.77	1.60	10.8
III	2.88	2.96	2.78	1.37	9.99
IV	3.70	3.87	4.00	1.73	13.3

Ventral spines on legs: tibia I, 0-1-0; tibiae II, III and IV, 1-1-0; metatarsi I and II, (left) 2-0-1; metatarsi II (right) and III, 2-1-1; metatarsus IV, 1-1-2. Dorsal spines on each femur, 1-1-3. Abdomen oval in shape. Posterior spinnerets long, with the apical segment slightly shorter than the basal and tapering. Epigynum small and wider than long (Fig. 14). Openings of spermatheca close to each other (Fig. 15). Genitalia look like a pair of C-letters facing each other (Fig. 15).

Colour. Cephalothorax grayish brown, median and lateral parts of thorax covered with short white hairs, and the other parts with short black hairs (Fig. 10). Chelicera dark brown; maxillae and labium grayish brown. Sternum blackish brown, the anterior half of the mid-line light yellowish brown (Fig. 13). Legs grayish brown, with four black ring flecks on each femur, and three gray ring flecks on each tibia. Venter of each coxa light yellowish brown, with a black spot, distal part dark gray. Dorsum of abdomen dark reddish brown with numerous small white spots, being covered with long and short black hairs intermingled with white ones; a pair of short stripes present at the anterior part, followed by four pairs of small spots, all being formed by short white hairs (Fig. 10). Venter of abdomen light reddish brown.

Male. Unknown.

Type-series. Holotype: ♀, paratype: 1♀ (Phakding, 2,590-2,610 m alt., Solukhumbu District, Sagarmatha Zone, East Nepal, L. C. [D8642-2744], 30-IX-1979, Y. NISHIKAWA leg.).

Notes. This new species resembles *Agelena lukla* NISHIKAWA, sp. nov., from the north of Lukla, East Nepal, but is distinguished from the latter by the different shape of epigynum and the following characteristics:

	<i>A. lukla</i>	<i>A. sherpa</i>
Retromarginal teeth	two	five
PME : PLE	PME < PLE	PME = PLE
A pair of black pattern on cephalothorax	narrow	wide
Sternum	light yellowish brown along the mid-line	light yellowish brown at the anterior half of mid-line
Ventral spot on each coxa	indistinct	distinct
Dorsum of abdomen	with a longitudinal light-coloured indented pattern along the median stripe, which is deep reddish brown in male	dark reddish brown with numerous small white spots and with a pair of short white stripes at the anterior part followed by four pairs of white spots

摘 要

西川喜朗（追手門学院大学生物学研究室，〒567大阪府茨木市西安威2-1-15）：ネパールのクモ。
I. クンブー地域産クサグモ属 *Agelena* の2新種。

ヒマラヤ地方のクサグモ属 *Agelena* は、シッキムから2種が知られているのみであったが、今回、ネパール東部のナムチェバザールの南方で、切りとおしの上部にタナ網を作っていた *Agelena lukla* と *Agelena sherpa* を新種として記載した。

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